

DU UCL calculations

DU1

Sample ID	TEQ Result
DU1SU2	379
DU1SU4	1040
DU1SU5	1091
<hr/>	
mean =	837
SD =	397
%RSD =	47.5%
1-sided 95% t-UCL =	1507
1-sided 95% Cheb-UCL =	1837 n = 3

DU2

Sample ID	TEQ Result
DU2SU9	195
DU2SU10	60
DU2SU17	248
DU2SU19	610
DU2SU28	463
DU2SU36	109
DU2SU30-1	168
DU2SU44	129
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mean =	248
SD =	191
%RSD =	77.1%
1-sided 95% t-UCL =	376
1-sided 95% Cheb-UCL =	542 n = 8

use 1st for DU2 SU30

only -1, not ave

EPA "splits"

DU2 SU28

DF6A0	287
DF6A4	331

DU3

Sample ID	TEQ Result
DU3SU1	453
DU3SU2	1428
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mean = 940
 SD = 689
 %RSD = 73.3%
 1-sided 95% t-UCL = 4018
1-sided 95% Cheb-UCL = 3065 n = 2

Sample ID TEQ Result
 DU4SU1 repeat 1502
 DU4SU2 602

 mean = 1052
 SD = 637
 %RSD = 60.5%
 1-sided 95% t-UCL = 3895
1-sided 95% Cheb-UCL = 3015 n = 2

Sample ID TEQ Result
 DU5SU1-1 1777
 DU5SU1-2 1653
 DU5SU1-3 1588

 mean = 1673
 SD = 96
 %RSD = 5.7%
1-sided 95% t-UCL = 1834
 1-sided 95% Cheb-UCL = 1914 n = 3

EPA "splits"

DU5 SU1	DF6A01	1835
	DF6A5	1779

Sample ID TEQ Result
 DU6SU1-1 1556
 DU6SU2 repeat 3121
 DU6SU3 1771

 mean = 2149
 SD = 848

%RSD = 39.5%
1-sided 95% t-UCL = 3579
1-sided 95% Cheb-UCL = 4284 n = 3

single sample

DU7

Sample ID TEQ Result
DU7SU1-reanalysis 5505

EPA "splits"

DU7 SU1

DF6A02	8385
DF6A6	8714

compare EPA DU7 analyses to theirs

EPA "splits" - my TEQ calcs

										DF6A0	287	DU2 SU28
										DF6A4	331	
										DF6A01	1835	DU5 SU1
										DF6A5	1779	
										DF6A02	8385	DU7 SU1
										DF6A6	8714	
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	1746-01-2,3,7,8-TCDD	20.2	U	ng/kg	234	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	40321-76 1,2,3,7,8-PeCDD	644	J	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	57653-85 1,2,3,6,7,8-HxCDD	10000		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	39227-26 1,2,3,4,7,8-HxCDD	2730		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	19408-74 1,2,3,7,8,9-HxCDD	5850		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/05/2014	03:25:00	35822-46 1,2,3,4,6,7,8-HpCDD	449000		ng/kg	3980	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/05/2014	03:25:00	3268-87- OCDD	4560000		ng/kg	16100	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	17:10:00	51207-312,3,7,8-TCDF	30.4	J	ng/kg	234	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	57117-411 2,3,7,8-PeCDF	66.0	U	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	57117-312,3,4,7,8-PeCDF	224	J	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	57117-44 1,2,3,6,7,8-HxCDF	1320		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	72918-211 2,3,7,8,9-HxCDF	659	U	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	70648-26 1,2,3,4,7,8-HxCDF	4840		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	60851-342,3,4,6,7,8-HxCDF	800	J	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	67562-35 1,2,3,4,6,7,8-HpCDF	60600		ng/kg	1210	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	55673-85 1,2,3,4,7,8,9-HpCDF	6830		ng/kg	1680	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	39001-02 OCDF	254000		ng/kg	2340	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	34465-46 Total TCDD	371		ng/kg	234	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	36088-22 Total PeCDD	2860		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	34465-46 Total HxCDD	40800		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	37871-00 Total HpCDD	685000		ng/kg	2110	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	55722-27 Total TCDF	437		ng/kg	234	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	30402-15 Total PeCDF	5090		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	55684-94 Total HxCDF	65600		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	38998-75 Total HpCDF	282000		ng/kg	1450	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	2222-20- Total TEQ - Bird	4160		ng/kg	0.0001	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	2222-21- Total TEQ - Fish	4680		ng/kg	0.0001	10/23/2014	E-DU7-SU1
DF6A0	DF6A02	320-10162-3	Soil	12/03/2014	15:21:00	3333-30- Total TEQ - Mammal	9990		ng/kg	0.0001	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	1746-01-2,3,7,8-TCDD	78.3	J	ng/kg	233	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	40321-76 1,2,3,7,8-PeCDD	686	J	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	57653-85 1,2,3,6,7,8-HxCDD	10700		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	39227-26 1,2,3,4,7,8-HxCDD	2870		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	19408-74 1,2,3,7,8,9-HxCDD	6040		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/05/2014	04:08:00	35822-46 1,2,3,4,6,7,8-HpCDD	454000		ng/kg	3840	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/05/2014	04:08:00	3268-87- OCDD	4590000		ng/kg	15300	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	51207-312,3,7,8-TCDF	68.3	J	ng/kg	233	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	57117-411 2,3,7,8-PeCDF	247	J	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	57117-312,3,4,7,8-PeCDF	242	J	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	57117-44 1,2,3,6,7,8-HxCDF	1280		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	72918-211 2,3,7,8,9-HxCDF	506	U	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	70648-26 1,2,3,4,7,8-HxCDF	5780		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	60851-342,3,4,6,7,8-HxCDF	851	J	ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	67562-35 1,2,3,4,6,7,8-HpCDF	63200		ng/kg	1430	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	55673-85 1,2,3,4,7,8,9-HpCDF	6960		ng/kg	1980	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	39001-02 OCDF	260000		ng/kg	2330	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	41903-57 Total TCDD	441		ng/kg	233	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	36088-22 Total PeCDD	2620		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	34465-46 Total HxCDD	43300		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	37871-00 Total HpCDD	712000		ng/kg	2390	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	55722-27 Total TCDF	325		ng/kg	233	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	30402-15 Total PeCDF	4940		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	55684-94 Total HxCDF	135000		ng/kg	1170	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	38998-75 Total HpCDF	296000		ng/kg	1700	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	2222-20- Total TEQ - Bird	4460		ng/kg	0.0001	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	2222-21- Total TEQ - Fish	5010		ng/kg	0.0001	10/23/2014	E-DU7-SU1
DF6A0	DF6A6	320-10162-6	Soil	12/03/2014	17:30:00	3333-30- Total TEQ - Mammal	10500		ng/kg	0.0001	10/23/2014	E-DU7-SU1

DU7SU1	7325	J	
DU7SU1-reanalysis	5505		re-analysis using 30-gram analytical sample, but more IS

Sample ID: DU7SU1										EPA Method 1613B									
Client Data					Sample Data					Laboratory Data									
Name: Oxford Environmental and Safety Inc.					Matrix: Soil					Lab Sample: 1400800-02					Date Received: 25-Oct-2014 9:00				
Project: Arkwood					Sample Size: 32.4 g					QC Batch: B4K0089					Date Extracted: 21-Nov-2014 9:22				
Date Collected: 23-Oct-2014 16:00					% Solids: 88.7					Date Analyzed: 01-Dec-14 18:53					Column: DB-225 Analyst: CVG				
										29-Nov-14 14:45					Column: ZB-SMS Analyst: WJL				
Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers											
2,3,7,8-TCDD	35.2			D	IS 13C-2,3,7,8-TCDD	56.3	25 - 164	D											
1,2,3,7,8-PeCDD	526			D	13C-1,2,3,7,8-PeCDD	66.9	25 - 181	D											
1,2,3,4,7,8-HxCDD	2590			D	13C-1,2,3,4,7,8-HxCDD	43.3	32 - 141	D											
1,2,3,6,7,8-HxCDD	8710			D	13C-1,2,3,6,7,8-HxCDD	51.1	28 - 130	D											
1,2,3,7,8,9-HxCDD	4540			D	13C-1,2,3,7,8,9-HxCDD	51.4	32 - 141	D											
1,2,3,4,6,7,8-HpCDD	332000			E, D	13C-1,2,3,4,6,7,8-HpCDD	61.0	23 - 140	D											
OCDD	1820000			B, E, D	13C-OCDD	65.1	17 - 157	I, D											
2,3,7,8-TCDF	20.4			D	13C-2,3,7,8-TCDF	40.5	24 - 169	D											
1,2,3,7,8-PeCDF	136			D	13C-1,2,3,7,8-PeCDF	52.5	24 - 185	D											
2,3,4,7,8-PeCDF	328			D	13C-2,3,4,7,8-PeCDF	50.2	21 - 178	D											
1,2,3,4,7,8-HxCDF	3340			D	13C-1,2,3,4,7,8-HxCDF	56.4	26 - 152	D											
1,2,3,6,7,8-HxCDF	1020			D	13C-1,2,3,6,7,8-HxCDF	62.8	26 - 123	D											
2,3,4,6,7,8-HxCDF	1640			D	13C-2,3,4,6,7,8-HxCDF	67.6	28 - 136	D											
1,2,3,7,8,9-HxCDF	382			D	13C-1,2,3,7,8,9-HxCDF	38.2	29 - 147	D											
1,2,3,4,6,7,8-HpCDF	45100			E, D	13C-1,2,3,4,6,7,8-HpCDF	66.4	28 - 143	D											
1,2,3,4,7,8,9-HpCDF	5910			D	13C-1,2,3,4,7,8,9-HpCDF	66.3	26 - 138	D											
OCDF	204000			E, D	13C-OCDF	57.1	17 - 157	D											
					CRS 37CI-2,3,7,8-TCDD	64.9	35 - 197	D											
										Toxic Equivalent Quotient (TEQ) Data									
										TEQMinWHO2005Dioxin 7330									
TOTALS																			
Total TCDD	442																		
Total PeCDD	2280																		
Total HxCDD	25400																		
Total HpCDD	486000																		
Total TCDF	413																		
Total PeCDF	4070																		
Total HxCDF	44700																		
Total HpCDF	212000																		